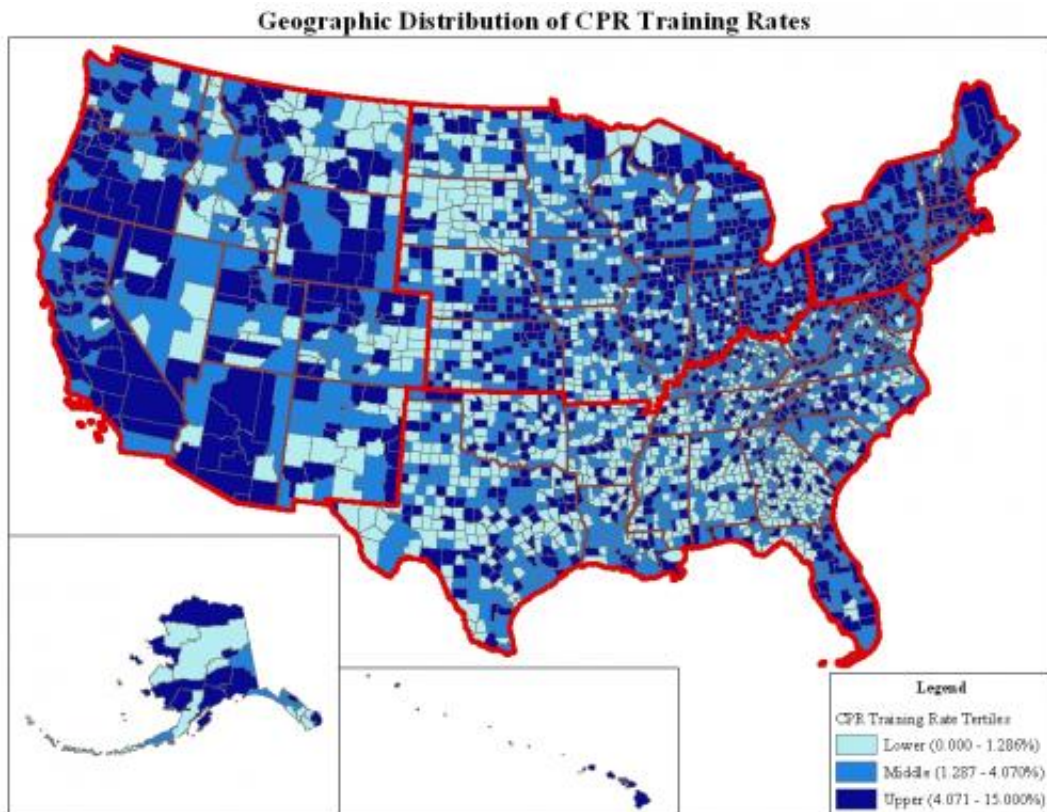


Rural and southern regions lack annual training in CPR

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Duke researchers analyzed CPR training rates across the US Counties in the South were the most likely to have lower rates of CPR training compared with the Northeast. Credit: Duke Clinical Research Institute

Annual rates of CPR training in the United States are low and vary widely across the country, but the communities most in need of training

are the least likely to be trained, according to a new study from the Duke Clinical Research Institute.

The findings, published Nov. 18, 2013, in *JAMA Internal Medicine*, add to known geographic disparities in cardiac arrest survival and offer a rationale to increase access to [training](#) for the life-saving intervention.

Each year, more than 350,000 Americans experience cardiac arrest outside of a hospital. On average, 7 to 9 percent of people survive, but these figures vary by geographic location.

Bystander CPR is the second step in the "chain of survival" for cardiac arrest, and should be started quickly after 911 has been called. It is a critical step before emergency personnel arrive, defibrillate, initiate advanced cardiac life support and get the patient to a hospital.

Research has shown that when bystanders perform CPR, it doubles the likelihood of an individual surviving cardiac arrest outside of the hospital. However, rates of bystanders performing CPR vary widely, from 10 percent to 65 percent, depending on the community.

"This variability in bystander CPR use may be accounted for by the proportion of CPR training in a particular community," said Monique Anderson, MD, the study's lead investigator and a cardiologist at Duke Clinical Research Institute.

The researchers studied whether variations in CPR training by county existed and what factors were associated with low CPR training among counties. They gathered data on the number of people trained in CPR by the American Heart Association, the American Red Cross and the Health & Safety Institute, the three major organizations providing training across the U.S.

During the one-year study, 13.1 million people in the United States received CPR training, with a median county training rate of 2.39 percent.

While low overall, CPR training rates also varied by county. Counties with the lowest rates of CPR training were more likely to be rural, have a higher proportion of African-American and Hispanic residents and a lower median household income. In addition, counties in the South were the most likely to have lower rates of CPR training compared with the Northeast.

"Rural counties were strongly associated with low rates of CPR training," Anderson said. "These areas are often far away from hospitals and ambulances can take longer to arrive. To bring about a change in these areas, we need community, government, healthcare institutions and training organizations to come together figure out how to improve the entire 'chain of survival' for cardiac arrest."

Some factors associated with variability in training rates overlap with factors previously found to be associated with variation in bystander CPR use, including household income and African-American and Hispanic populations. The findings suggest that lower county-level rates of CPR training may, in part, contribute to the lower use of bystander CPR.

In addition, counties with lower rates of CPR training correlated with counties with higher rates of mortality due to heart disease. Although these factors are not directly linked, they suggest that CPR training may be lacking in populations with residents at the highest risk of cardiac arrest.

"Our study points to a large unmet need for moving CPR training to target at-risk populations in rural and poor communities," said senior

author Eric Peterson, MD, MHS, professor of medicine and director of the Duke Clinical Research Institute. "Such an effort could substantially reduce the known racial gap in survival following [cardiac arrest](#)."

The researchers noted that the study captured county-level factors in CPR training, not individual factors, so the study does not demonstrate who is actually being trained. In addition, the study looked at data from the three leading organizations offering CPR training, but there are likely other training efforts not reflected in the study.

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